

## ABSTRACT

An embodiment of the present invention described and shown in the specification is a system for optimizing data used in creating a photolithographic mask. The system reads a definition of a layer of wafer to be created with a photolithographic mask and defines a number of polygons corresponding to conventional patterns on a mask and polygons corresponding to areas on the mask that are phase shifters. A number of data layers are created and the polygons that define phase shifting areas that shift the phase of light by differing amounts of are grouped in different data layers. Once separated, the system analyzes the polygons in each data layer against one or more design rules and assigns a phase shift amount to all the polygons in a data layer in accordance with the analysis. The polygon definitions in each data layer are then given to a mask maker to fabricate a photolithographic mask. It is emphasized that this abstract is being provided to comply with the rules requiring an abstract and will not be used to interpret or limit the scope or meaning of the claims under 37 C.F.R. § 1.72(b).